

# *Justifying the provision of a standing frame for home use – a good case to quote*

**Kate Stainsby, Heather Thornton**

The Regional Rehabilitation Unit, Northwick Park Hospital.

## Summary

This article describes the clinical reasoning behind the decision to provide a standing frame to a patient for home use. The process to acquire the chosen standing frame and the means to ensure its use are described. The successful outcome illustrates the clinical and financial benefits of effective provision of specialist equipment.

## Introduction

Long-term neurological patients need to be maintained in the community. Unfortunately the ideal resources of regular therapy and support from dedicated care workers is rarely available. The consideration is therefore how to achieve maintenance and if possible progression with minimal professional input. The following case study aims to illustrate this point.

## The Patient

Bob presented with quadraparesis, dysphagia, dysarthria and mild cognitive impairments as a result of meningitis following a frontoethmoidectomy. He was referred to the Regional Rehabilitation Unit (RRU) for intensive rehabilitation from all disciplines, 6 months post onset having had a number of medical complications. His transfer to the unit was further delayed due to his positive MRSA status. He was 52 years old, retired and prior to hospital admission was living with his wife in a house.

## Why we chose a standing frame

Bob's main physical problems were as follows:

1. Decreased activity in all 4 limbs.
2. Minimal trunk control with a kyphosed posture.
3. Poor head control with limited range of movement
4. Limited bilateral hip flexion
5. Tight left TA.

He also had:

6. An ineffective cough with subsequent recurrent chest infections
7. Low levels of motivation, concentration and poor exercise tolerance.

Standing was identified as an important part of Bob's therapy as it addressed all of the identified problem areas. Bob's ultimate goal was to be able to walk again. Although this goal was unrealistic, certainly in the foreseeable time period, it underpinned his hopes for the future. He saw standing as a positive step towards this aim and was more motivated to stand than to do other therapeutic activities on a plinth or in sitting. A standing position was initially achieved using a tilt table and was then progressed to a wooden standing frame with straps. The latter required 3 people to achieve a standing position. Bob was able to tolerate 15-20 minutes in the Oswestry frame. The problem then arose as to how the benefits gained from standing could be achieved at home with only Bob's wife or one carer available.

## Process to acquire and evaluate standing frame

The next step was to evaluate the frames on the market. The whole process of acquiring and using the frame is outlined in figure 1 (below *right*). The key requirements in this case were:

- ⌘ One person could get Bob in the standing frame without difficulty
- ⌘ Bob liked it
- ⌘ It was aesthetically acceptable for home use.

Four types of standing frame were evaluated specifically for Bob (see Figure 2).

### The decision

The standing frame ultimately selected, the Flexistand, fulfilled all the criteria. In addition it had electronic hand held controls which Bob could operate and therefore move himself up and down and side to side, once stood. This gave him a sense of control. Later, when at home Bob even stood in the garden, and was able to teach a friend how to assist him when his wife was out. The Flexistand was £2,700 to purchase at this time.

Contact the Disabled  
*Living Foundation&*  
*ask for companies making*  
*frames*



Contact suppliers



Test frames with Bob



Request funding



Weeks trial with  
Bob and wife



Equipment provided  
at home and fitted  
according to  
specifications



Community visit to  
finalise plan and  
instruct carer

**Figure 1 Process to  
acquire standing  
frame.**

### Establishing use

#### Training and education

We were fortunate that the manufacturers allowed us to borrow the frame for a week. The next stage was to establish the use of the frame in Bob's normal routine. So Bob's wife who visited daily started assisting Bob into the standing frame. Initially this was with staff supervision but they quickly became independent.

### The purchase

Having identified the need for the standing frame and established that Bob and his wife could effectively manage the Flexistand between them we then had to secure funding. The Health Authority approached fortunately had a very positive attitude and approved funding.

Tilt table	Oswestry	Electric frame	Flexistand
Maximum	Moderate	Moderate	Moderate
Minimal	Maximum	Moderate	Moderate
2	3	2	1
Good	Limited	Uncomfortable	Comfortable
High	Low	Medium	High
Good alignment but not very active	Difficult to maintain in a good position	Maintained in a position but not forward over feet	Good position
Holds patient in one position	Difficult to get into and maintain good position	Unable to achieve good alignment not very comfortable	Able to move in frame with good alignment but needs specifically setting up for each individual patient

**Figure 2 The types of standing frame evaluated for Bob prior to discharge.**

These comments are specific to Bob when evaluated prior to discharge and are not evaluative comments on the standing frames in general.

## The Outcome

### Discharge to the community

Following discharge the frame was provided at home and fitted according to Bob's specifications. On discharge Bob was able to stand comfortably for 20-30 minutes with assistance from one in the Flexistand. He was able to achieve good trunk and head control. He was able to use the hand controls with his right hand automatically and left-hand movement and quadriceps activity was beginning to improve. He was able to achieve a more upright supported sitting posture in the wheelchair and therefore use a computer, operate an electric outdoor scooter and interact with family and friends. The frequency of chest infections was dramatically reduced with a subsequent increase in breath control and voice volume. As Bob was still slowly improving with daily standing the need for a follow-up assessment was identified.

### Review

On review Bob's standing was much improved and he required less physical support. He showed potential to improve further with regard to his transfers and upper limb function. A re-admission for a 6-week period of further intensive rehab was therefore planned.

### Readmission

Bob was readmitted in January 98, two years post onset. His need for a standing frame was again evaluated. On this occasion it was found that he could easily be stood in an Oswestry frame. The same process was followed, and he was provided with an Oswestry frame. He has now progressed to transferring with assistance using a sliding board or a standing pivot transfer. The hoist is

only used at night when Bob is tired. Bob has continued to progress and is now starting to do standing step round transfers.

### **Bob's Progress**

The provision of standing frames and the physical progression are outlined in figure 3. Bob made considerable progress in other areas of his rehabilitation that have not been covered in this report.

### **Effective use of resources**

The use of a standing frame was thought appropriate in this case for a number of reasons. Bob needed regular daily input to prevent contractures and to maintain his chest, he liked standing and was willing to comply with this. Daily standing with a physiotherapist or three people would have been very expensive and unavailable unless privately financed. Given the long-term nature of Bob's disability it would have been extremely expensive. The standing frame that was eventually purchased for Bob cost £ 2,700. The standing frame also gives independence from hospital-based therapy, and helps with the reintegration back into the community. Bob's wife is very devoted and was determined that Bob should return home. This involved major structural adaptations to their house. She also wanted to play a key role in all aspects of Bob's care following discharge. A community care package was therefore set up with his wife as one of the main carers. Bob has exceptional care staffs who have been keen to be involved in his therapy programme. The aim was to reassess and bring Bob back in for a short admission at a later date as he continued to make slow progress. To ensure effective progression of his therapy regime, community physiotherapy, occupational therapy and nursing services were also arranged.

### **Benefits of standing**

The use of a standing position has been demonstrated to have a wide range of benefits for the physically impaired patient. The secondary complications, which can develop following trauma or a disease process, can have serious implications on rehabilitation and quality of life. These complications are well documented. They include bladder infections, pressure sores, contractures, muscle atrophy, noxious spasticity (Pope et al, 1992; Nickels, 1982), loss of bone density, (Goemaere et al, 1994), impaired respiratory function and psychological regression ( Kunkal et al, 1993 ). Such complications have been shown to be reduced by regular standing either independently or with assistance (Bromley, 1985). Richardson (1991) demonstrated a positive effect on the length of soft tissues and joint position by using a tilt table to achieve an upright position.

### **Conclusion**

This case illustrates that stopping intensive inpatient rehabilitation needn't result in a deterioration of a patient's condition. Discharge to the community of a severely disabled neurological person can be successful with effective analysis and planning. For this patient provision of a standing frame proved to be a cost-effective way of maintaining and improving his function between intensive periods of rehabilitation. The importance of establishing a maintenance behaviour regime prior to discharge should not to be underestimated.

### **REFERENCES**

- Bromley I *Tetraplegia and Paraplegia: A Guide for Physiotherapists*. 3rd Ed, New York, Churchill Livingstone, 1985
- Goemaere et al (1994) *Bone Mineral Status in Paraplegic Patients who do or do not Perform Standing* **Osteoporosis International** 4 (3) pp138-143
- Kunkal et al (1993) *Effect of Standing on Spasticity, Contracture and Osteoporosis in Paralyzed Males* **Archive Phys Med Rehabil** Vol 74 pp73-78